SSC Pacific T2 TECHNOLOGY TRANSFER

SPAWAR Systems Center PACIFIC

COMMERCIALIZATION OPPORTUNITY

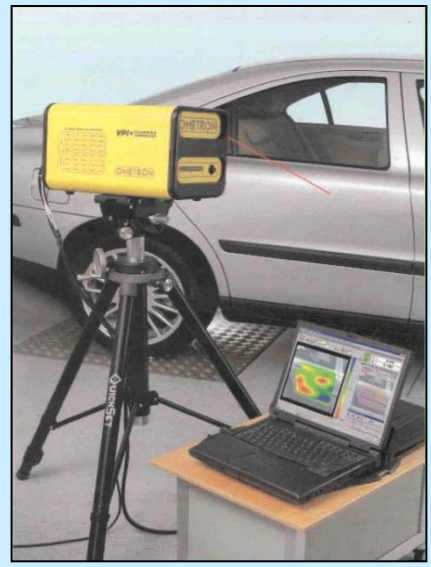
Vehicle Void Detection System

Non-invasive system uses laser vibrations to detect voids in vehicle compartments that could be used to hide explosives or contraband

The U.S. Navy seeks to commercialize U.S Patent Application 12/329,726 (Explosives and contraband detection system).

Background

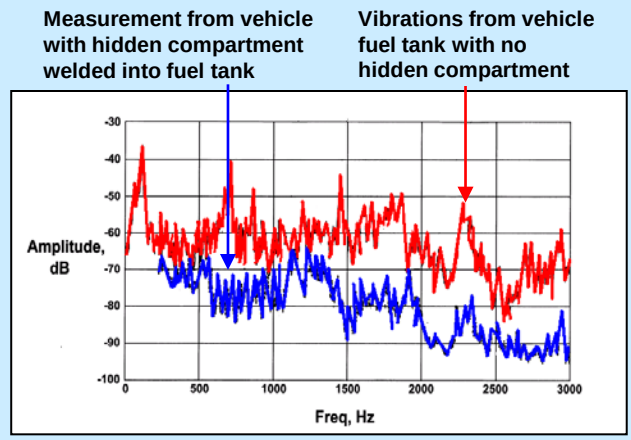
Explosive detection is a non-destructive inspection process to detect explosive material, and is commonly conducted at airports, ports, and at U.S. borders. As detection systems evolve, smugglers continue to find new ways to conceal weapons and contraband, such as creating false voids in a vehicle's fuel tank or inside door panels. Detection of voids hidden within vehicle compartments is difficult, unreliable, time consuming, and expensive. Current detection methods typically use either x-rays or canines. Canine methods are limited in availability and while the use of x-rays is more reliable, it is expensive and not widely available. Furthermore, these systems do not allow the user to augment or reduce search efforts according to threat levels to maintain a balance between thorough search capabilities and lengthy search times. A non-invasive, fast, reliable system for detecting vehicle voids and compartments that may contain explosives or contraband with the ability to adjust search stringency according to threat levels would be ideal.



Easily transportable system will detect voids hidden within vehicles in real time (5-10 seconds).

The Technology

SSC Pacific has developed a system for detecting voids in vehicle compartments that could potentially conceal explosives or contraband. This system uses laser vibrometers to first measure vibrations from vehicle compartments, such as fuel tanks and door panels. Next, the measurements are compared to a database reference taken from a similar unmodified vehicle. Any modifications to these compartments will result in a shift from their normal resonant frequency levels. If the difference in vibrations exceeds a specified level when compared to the reference levels, the operator is notified and a more detailed inspection of the vehicle may be recommended.



Laser vibrometers measure vibrations and compare the measurements to a baseline reading to detect hidden voids in vehicles.

Key Benefits

- System can detect voids inside vehicles without the use of x-rays
- Stringency level is adjustable, allowing user to increase detection stringency during high threat levels and "relax" stringency during lower threat levels
- Less expensive and potentially more accessible than current detection methods

Development Status

- U.S Patent Application pending: 12/329,726
- DoD 5000 Series Technical Readiness Level 5: Component and/or breadboard validation in relevant environment
- Prototype could be produced within one year

For more information on technology transfer, please contact us at (619) 553–5118 or email ssc_pac_t2@navy.mil

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